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Post-mortem encrustation patterns of *Clypeaster rosaceus* tests from San Salvador, The Bahamas and their effects on preservation potentials

Sven Zille, Tobias B. Grun and James H. Nebelsick

Department of Geosciences, University of Tübingen, Hölderlinstraße 12, 72074 Tübingen, Germany

Clypeaster rosaceus represents common secondary substrates for post-mortal encrustation and bioerosion. Tests of these clypeasteroid echinoids have been collected from the Bahamian Island of San Salvador. The oral and aboral surface show different morphologies, with the flattened oral surface containing the periproct and (highly indented) peristome as well as simple straight food grooves, while the domed aboral surface contains the inflated petals with ambulacral pores. Both surfaces are characterized by numerous sunken tubercles which are larger on the oral side. This study aims to: (1) establish the number and degree of post-mortem encrustation and bioerosion on the echinoid test surface, (2) ascertain the succession of infestation, (3) compare oral and aboral test sides and (4) analyze the effect of encrustation on the preservation potential of these multi-plated shells.

A number of different taxa contribute to both encrustation and bioerosion. Encrusters include coralline and fleshy algae, foraminifera, serpulids and rare corals. Bioerosion is found in larger and smaller holes as well as slit-like *Rogerella* which is attributed to boring cirripeds. Coralline algae can be pervasive covering the whole specimens and often showing protuberances. Fleshy algae can also be present as variously thick thalli. Encrusting foraminifera can be clearly separated into two taxa: flattened white to grey *Planorbulina* and red to pink upright growing *Homotrema*. Especially the latter show different states of preservation ranging from dark red, upright growing forms to heavily eroded, pink forms. *Planorbulina* is often found in early stages of encrustation while *Homotrema* predominates on heavily encrusted test. Three different growth forms of serpulids are present: long thin tubes, shorter thicker tubes (often showing a sculptured surface) as well as enrolled *Spirobis* types. Most serpulids are found on the oral side of the echinoids and show conspicuously growth around the tubercles. Differences in encrustation are, in part, clearly present between the oral and aboral test sides, especially in less encrusted forms.